

**FEDERAL AID
ANNUAL RESEARCH PERFORMANCE REPORT**

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 25526
Juneau, AK 99802-5526

PROJECT TITLE: Population dynamics of Interior and Southwest Alaska caribou herds

PRINCIPAL INVESTIGATOR: Mark A. Keech

COOPERATORS: Ron Squib (FWS, King Salmon, AK) and Andy Aderman (FWS, Dillingham, AK)

FEDERAL AID GRANT PROGRAM: Wildlife Restoration

GRANT AND SEGMENT NR: W-33-2

PROJECT NR: 3.45

WORK LOCATION: Game Management Unit 20A

STATE: Alaska

PERIOD: 1 July 2003–30 June 2004

I. PROGRESS ON PROJECT OBJECTIVES SINCE PROJECT INCEPTION

OBJECTIVE 1: Census the Delta Herd annually from 2002 to 2007.

We conducted Delta Herd photo censuses on 24 June 2003 and on 14 July 2004. Results of the censuses indicate that the Delta Herd has probably declined by several hundred animals each of the last 2 years. This is similar to the trend this herd has exhibited over the last 10 years.

OBJECTIVE 2: Determine causes and timing of adult mortality caribou in the Delta Herd.

We monitored 61 and 72 radiocollared short-yearling or older caribou in the Delta Herd in the 2002–2003 and 2003–2004 reporting periods, respectively. The annual survival rates were 85% in both years of the study. Through this reporting period, the majority of the mortality occurred during winter, with wolves being the proximate cause of death for most individuals.

OBJECTIVE 3: Monitor movements, distribution, and dispersal of the Delta Herd.

Since July 2002 we have conducted 12 comprehensive radiolocation flights (6 each year). Movements and distribution of Delta caribou during these years was similar to previous

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Please note: This is a progress report and the information contained within may be further analyzed and refined.

years, with the majority of the herd occupying the northcentral portion of the Alaska Range or the Yanert–upper Wood River valleys, smaller groups of caribou were located along the eastern edge of Unit 20A and in the northern portion of Unit 13E. Most major concentrations of caribou during annual photo censuses were within the Wood River drainage, with smaller groups in the Yanert River and northern Unit 13E.

OBJECTIVE 4: Determine the natality rate and timing of calf production in the Delta Herd.

Natality rate for collared adult Delta caribou was determined during both years of this study and was 69% and 72% in spring 2003 and 2004 respectively. Timing of calf production was not obtained during spring 2003 or 2004.

OBJECTIVE 5: Determine the natality rate and timing of calf production in the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds.

This project has not assisted in determination of natality rate and timing of calf production in these other herds during spring 2003 or 2004. Natality rate and timing of calf production in the Mulchatna, Nushagak Peninsula, and the Northern Alaska Peninsula herds was determined during these years by Department of Fish and Game area offices and federal agency cooperators.

OBJECTIVE 6: Determine recruitment in the Delta Herd, Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds.

We completed composition counts on the Delta Herd on 28 September 2002 and 6–7 October 2003. Results from the fall 2002 and 2003 composition counts are similar to previous years. This project did not assist in composition counts on other Alaska herds. The Department of Fish and Game area offices and federal agency cooperators conducted composition counts on the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds during fall 2002 and 2003.

OBJECTIVE 7: Investigate the presence and role of disease in the Delta, Mulchatna, Nushagak Peninsula, and Northern and Southern Alaska Peninsula herds.

During fall 2002, 10 short-yearling caribou were collected from the Mulchatna Herd to necropsy for disease investigation information. No caribou were collected for necropsy from the other study herds in 2002 or from any study herd during the 2003–2004 reporting period. All yearling and older caribou that were captured and released in the Delta, Mulchatna, Nushagak Peninsula, and Alaska Peninsula herds for other aspects of this project had blood drawn to scan for diseases and to store for future analysis.

OBJECTIVE 8: Monitor food habits of the Delta, Denali, Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds, and periodically monitor winter food habits of other Interior herds.

No fecal samples were taken to monitor food habits of study herds through this reporting period.

OBJECTIVE 9: Monitor body condition and changes in body size and weight in calves and adults, and determine if weight and condition are related to summer and winter weather and recruitment.

During the 2002–2003 reporting period, 15 4-month-old calves were captured in September 2002 and 15 10-month-old calves were captured in April 2003 in the Delta Herd to monitor body condition and body size. During the 2003–2004 reporting period, 15 4-month-old calves were captured in October 2003 and 14 10-month-old calves were captured in April 2004 in the Delta Herd to monitor body condition and body size (no capture mortalities). In addition, during April 2004, 7 adult caribou were captured to replace old radiocollars (one adult caribou was killed by wolves 2 days after capture and was considered a capture mortality). In May 2003 we attempted to capture newborn caribou calves in the Delta Herd but were unsuccessful in obtaining an adequate sample size (no capture mortalities). No newborn caribou calves were captured in the Delta Herd during spring 2004.

OBJECTIVE 10: Review literature, prepare annual performance reports, a final report, and manuscripts for publication in refereed literature.

Relevant caribou literature was reviewed through this reporting period. Federal Aid research performance report covering 1 July 2002–30 June 2003 was written and submitted to Federal Aid during the 2003–2004 reporting period, and has been posted to the ADF&G website. No other results from this study were reported or published through this reporting period.

II. SUMMARY OF WORK COMPLETED ON JOBS IDENTIFIED IN ANNUAL PLAN THIS PERIOD

JOB 1: Census the Delta Herd annually from 2002 to 2007.

This job was not accomplished during the reporting period. However, Federal Aid funds were used to pay for flight time for aviation fuel for State of Alaska fixed-wing aircraft used to monitor caribou in June prior to the July 2004 census, and to pay salary for Alaska Department of Fish and Game employees.

JOB 2: Determine causes and timing of mortality adult in the Delta Herd.

This job was accomplished during the reporting period. Federal Aid funds were used to pay for caribou radio collars, capture drugs, and approximately 25 hours flight time of Robinson R-22 and R-44 helicopters used during capture operations and during retrieval of mortalities from the field. Funds were also used to pay for aviation fuel for State of Alaska fixed-wing aircraft used during monitoring and location flights, and to pay salary for Alaska Department of Fish and Game employees.

JOB 3: Monitor movements, distribution, and dispersal of the Delta Herd.

This job was accomplished during the reporting period. Federal Aid funds were used to pay for aviation fuel for State of Alaska fixed-wing aircraft used during 6 comprehensive and several shorter monitoring and location flights, and to pay salary for Alaska Department of Fish and Game employees.

JOB 4: Determine the natality rate and timing of calf production in the Delta Herd.

This job was accomplished during the reporting period. Federal Aid funds were used to pay for flight time for 1 charter aircraft and for aviation fuel for State of Alaska fixed-wing aircraft used during 2 natality flights, and to pay salary for Alaska Department of Fish and Game employees.

JOB 5: Determine the natality rate and timing of calf production in the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds.

This job was accomplished by Alaska Department of Fish and Game area offices and federal cooperators. No Federal Aid funds from this project were used to pay for costs associated with this job during this reporting period.

JOB 6: Determine recruitment in the Delta Herd, Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds.

This job was accomplished during the reporting period. Federal Aid funds were used to pay for approximately 15 hours flight time of Robinson R-22 and R-44 helicopters used during composition counts on the Delta Herd. Funds were also used to pay for aviation fuel for State of Alaska fixed-wing aircraft used during location flights, and to pay salary for Alaska Department of Fish and Game employees working on the Delta Herd. No Federal Aid funds from this project were used to pay for costs associated with the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds during this reporting period.

JOB 7: Investigate the presence and role of disease in the Delta, Mulchatna, Nushagak Peninsula, and Northern and Southern Alaska Peninsula herds.

This job was accomplished during the reporting period. Federal Aid funds were used to pay for flight time of Robinson R-22 and R-44 helicopters used during Delta Herd caribou captures. Funds were also used to pay for aviation fuel for State of Alaska fixed-wing aircraft used during location flights, and to pay salary for Alaska Department of Fish and Game employees working on the Delta Herd. No Federal Aid funds from this project were used to pay for costs associated with the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds during this reporting period.

JOB 8: Monitor food habits of the Delta, Denali, Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds, and periodically monitor winter food habits of other Interior herds.

This job was not accomplished during the reporting period. Funds that were allocated for this job were used to help pay for determining the natality rate of the Delta Herd.

JOB 9: Monitor body condition and changes in body size and weight in calves and adults, and determine if weight and condition are related to summer and winter weather and recruitment.

This job was accomplished during the reporting period. Federal Aid funds were used to pay for approximately 15 hours flight time of Robinson R-22 and R-44 helicopters used during Delta Herd captures. Funds were also used to pay for capture equipment, capture drugs, and

aviation fuel for State of Alaska fixed-wing aircraft used during location flights, and to pay salary for Alaska Department of Fish and Game employees.

JOB 10: Review literature, prepare annual progress reports, a final report, and manuscripts for publication in refereed literature.

This job was accomplished during the reporting period. Federal Aid funds were used to pay salary for Alaska Department of Fish and Game employees.

III. ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD

None.

IV. PUBLICATIONS

P. VALKENBURG AND M.A. KEECH. 2002. Population dynamics of Interior and Southwest Alaska caribou herds. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration Research Performance Report. Grant W-27-5. Project 3.45. Juneau, Alaska.

M. KEECH. 2003. Population dynamics of Interior and Southwest Alaska caribou herds. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration Research Performance Report. Grant W-27-5. Project 3.45. Juneau, Alaska.

V. RECOMMENDATIONS FOR THIS PROJECT

None.

VI. APPENDIX

None.

VII PROJECT COSTS FOR THIS SEGMENT PERIOD

FEDERAL AID SHARE \$41,034 + STATE SHARE \$13,678 = TOTAL \$54,712

VIII. PREPARED BY:

Mark A. Keech
Wildlife Biologist III

SUBMITTED BY:

Mark E. McNay
Acting Research Coordinator

Laura A. McCarthy
Publications Technician II

APPROVED BY:

Thomas W. Paul, Federal Aid Coordinator
Division of Wildlife Conservation

Matthew H. Robus, Director
Division of Wildlife Conservation

APPROVAL DATE: _____